

Short Report

## The importance of the frequency of suicide attempts as a risk factor of suicide

Ken Inoue MD <sup>a,b,\*</sup>, Hisashi Tanii PhD, MD <sup>a</sup>, Tatsushige Fukunaga PhD, MD <sup>c</sup>,  
Shuntaro Abe MD <sup>d</sup>, Fusae Nishimura PhD <sup>e</sup>, Yukiko Kimura MS <sup>e</sup>,  
Yukika Nishimura MS <sup>a</sup>, Atsushi Nishida MS <sup>a</sup>, Naomi Kajiki MS <sup>a</sup>, Junsuke Tawara MS <sup>a</sup>,  
Hiroyuki Ikemura MS <sup>a</sup>, Masakazu Hanagama MD <sup>f</sup>, Koutaro Shinone MS <sup>f</sup>,  
Chika Yokoyama MA <sup>b</sup>, Hisanobu Kaiya PhD, MD <sup>b</sup>,  
Masayuki Nata PhD, MD <sup>f</sup>, Yuji Okazaki MD <sup>a,g</sup>

<sup>a</sup> Department of Psychiatry, Mie University Graduate School of Medicine, 2-174 Edobashi, Tsu 514-8507, Japan

<sup>b</sup> Warakukai Incorporated Medical Institution, Nagoya 453-0015, Japan

<sup>c</sup> Tokyo Medical Examiner's Office, Tokyo Metropolitan Government, Tokyo 112-0012, Japan

<sup>d</sup> Department of Forensic Medicine, The Jikei University School of Medicine, Tokyo 105-8461, Japan

<sup>e</sup> Department of Hygiene, Kanazawa University School of Medicine and Graduate School of Medical Sciences, Kanazawa 920-8640, Japan

<sup>f</sup> Department of Forensic Medicine and Sciences, Mie University Graduate School of Medicine, Tsu 514-8507, Japan

<sup>g</sup> Tokyo Metropolitan Matsuzawa Hospital, Tokyo 156-0057, Japan

Received 24 January 2006; received in revised form 3 October 2006; accepted 24 October 2006

Available online 18 January 2007

### Abstract

The number of suicides in Japan has increased from approximately 22,000 per year in 1988–1997 to over 30,000 per year since then. The number has also increased in Mie Prefecture during this period. According to many reports, suicide attempts are one of the risk factors of suicide. In the present study, we investigated the incidences and circumstances of all suicide cases between 1996 and 2002, focusing in detail on the frequency of suicide attempts and general differences in the frequency of all suicide cases.

During the 7 years, 1979 male and 969 female suicides were reported to Mie Prefectural Police Headquarters. During the test period, there were suicide attempts in 13.4% of all suicidal cases, 10.7% for men and 18.9% for women. The average age was 48.98 years (SD 17.68), 47.07 years (SD 16.32) for men, and 51.19 years (SD 18.89) for women. Among men, we discovered the risk factors of suicide attempts in completed suicides, which were “single time” of suicide attempts, “living with family” for the family constitution, and “visiting treatment” of the admission statuses. Among women, the risk factors were “living with family” and “visiting treatment”. We must pay attention to those risk factors.

© 2006 Elsevier Ltd and FFLM. All rights reserved.

**Keywords:** Suicide; Suicide attempt; Risk factor; Japan; Mie Prefecture

The number of suicides in Japan has increased from approximately 22,000 per year in 1988–1997 to over 30,000 per year since then.<sup>1</sup> The number has also increased

in Mie Prefecture during this period.<sup>2,3</sup> In Japan, the only large-scale study of suicide, which covered the 7 years from 1989 to 1995, has been reported by Yoshioka.<sup>4</sup> According to the report, Mie Prefecture showed an intermediate suicide rate, which reflects that of all of Japan. Moreover, according to Takahashi, suicide attempts are one of the risk factors of suicide.<sup>5</sup> Hayakawa et al.<sup>6</sup> described that there are many cases completed suicides in repeating

\* Corresponding author. Address: Department of Psychiatry, Mie University Graduate School of Medicine, 2-174 Edobashi, Tsu 514-8507, Japan. Tel.: +81 59 231 5018; fax: +81 59 231 5208.

E-mail address: [ke-inoue@clin.medic.mie-u.ac.jp](mailto:ke-inoue@clin.medic.mie-u.ac.jp) (K. Inoue).

suicide attempts. The persons of suicide attempts think about the death momentarily even when the suicide action is done. So, the medical staffs (especially psychiatrists) should pay attention to the suicide in the all cases of suicide attempt. It has been possible to analyze enough suicide data for Mie Prefecture to investigate the causes of suicide in detail. Therefore, in the present study, we investigated the incidences and circumstances of all suicide cases between 1996 and 2002 in cooperation with the Mie Prefectural Police Headquarters, focusing in detail on the frequency of suicide attempts and sexual differences in the frequency of all suicide cases between 1996 and 2002. The most of the informations of suicide attempts in the Mie Prefectural Police Headquarters were interviewed from the family and acquaintances. Statistical analysis was performed using Fisher's exact test. All data were completely anonymous after encoding.

During the test period, 2948 suicides, 1979 male and 969 female, were reported to Mie Prefectural Police Headquarters, giving a male/female ratio of approximately 2:1. The mean number of suicides per year was 421.1, with a range from 319 in 1997 to 501 in 1998. During the test period, there were suicide attempts in 394 suicides, 13.4% of all suicidal cases; more specifically, there were attempts in 211 suicides, 10.7%, for men and in 183, 18.9%, for women. The average age was 48.98 years (SD 17.68), 47.07 years (SD 16.32) for men, and 51.19 years (SD 18.89) for women. The frequency of suicide attempts in completed suicides is shown in Table 1. We compared "single time" with "multiple times" of suicide attempts in completed suicides for each sex. In men, 178 cases of completed suicides among men were "single time"; 123 cases were "multiple times"; 55 cases, and "single time" were statistically significant factors ( $P < 0.01$ ). In women, 148 cases of completed suicides among women were "single time"; 75 cases were "multiple times"; 73 cases, and "single time" were not statistically significant factors. In total, suicide attempts in completed suicides were "single time"; 198 cases were "multiple times"; 128 cases and "single time" were statistically significant factors ( $P < 0.01$ ).

The family constitution of suicide attempts in completed suicides is shown in Table 2. We compared "alone" with "living with family" for the family constitution of suicide attempts in completed suicides. A total of 35 and 21 cases among men and women with suicide attempts resulting in completed suicides were "alone". In contrast, 161 and

Table 2

Family constitution of suicide attempts in completed suicides

Person	Men (cases)	Women (cases)
1	35	21
2	39	53
3	48	33
4	32	34
5 or more	42	27
Unknown	15	15

147 cases among men and women with suicide attempts resulting in completed suicides were "living with family". "Living with family" for family constitution in suicide attempts resulting in completed suicides was a statistically significant factor for each sex ( $P < 0.01$ ).

As shown in Table 3, the admission statuses of suicide attempts in completed suicides were "visiting treatment (outpatients)", "hospitalization treatment (inpatients)", "none", and "unknown". We compared "visiting treatment" with "hospitalization treatment" and "none" of suicide attempts in completed suicides. Of the various admission statuses, "visiting treatment" for suicide attempts in completed suicides was a statistically significant factor in each sex ( $P < 0.01$ ).

In the reports of suicide attempts in completed suicides among Japan, Sato et al.<sup>7</sup> reported approximately 10% of all suicidal cases in Ishikawa Prefecture during 1989–1994 and Yoshioka<sup>4</sup> reported 10–15% of all suicidal cases in Japan. In this context, our report resembles the conventional reports of suicide attempts in completed suicides among Japan.

Medical staff should pay attention not only to the number of suicide attempts but also to the history of suicide attempts. Therefore, medical staff must ask the patients of the history of suicide attempts medical information in inquiry in detail. However, in the present study, we discovered that it had nothing to relate to the number of suicide attempts with women, but was related to the number of suicide attempts with men, so we must pay attention to enforce "once" in the men.

Among the family constitution of suicide attempts in completed suicides, we were apt to assume that more would be "alone" than "living with family"; however, more were actually "living with family". We think that suicide attempts in completed suicides correlate "living with family". For results of it, it is necessary for family members of suicide attempts to realize accidents of suicide attempts.

Table 1

The frequency of suicide attempts in completed suicides

Time	Men (cases)	Women (cases)
1	123	75
2	28	31
3	13	12
4	3	1
5 or more	11	29
Unknown	33	35

Table 3

The admission statuses of suicide attempts in completed suicides

Treatment	Men (cases)	Women (cases)
Visiting	124	127
Hospitalization	12	19
None	52	21
Unknown	23	16

It is concluded that we should pay closer attention to patients with suicide attempts who are undergoing “visiting treatment” and who are “living with family”, and such risk factors should be examined in interviews on clinical sites.<sup>8–11</sup> In addition, we should cooperate with family members of suicide attempts, and it is necessary to pay close attention to every suicide attempt.

## References

1. Ishihara A. Suicide in Japan – the analysis of vital statistics. *J Mental Health* 2003;**49**(Suppl.):13–26 in Japanese.
2. Inoue K, Abe S, Okazaki Y, et al. Underlying factors for the rapid increase of suicide in Mie Prefecture, Japan. *Med Sci Law* 2005;**45**(4):345–55.
3. Inoue K, Fukunaga T, Abe S, et al. Suicide in Mie Prefecture, Japan. *Rechtsmedizin* 2005;**4**:322–3.
4. Yoshioka N. Present status of suicide in Japan, and the preventive application: report of a Grant-in-Aid for Scientific Research (Ministry of Education, Culture, Sports, Science, and Technology of Japan); 1997 in Japanese.
5. Takahashi Y. Suicide in Japan and the world. *Jpn J Clin Psychopharmacol* 2004;**7**:1099–110.
6. Hayakawa N, Ando H, Ichimura A, et al. Prevention of suicide re-attempt: two cases of short term admission for crisis intervention to repeaters. *Psychiatry* 2006;**8**:425–9 in Japanese.
7. Sato Y, Konodo N, Oshima T. Examination of statistics of suicide in Ishikawa prefecture. *Ishikawa Med J* 1996;**1126**:34–9 in Japanese.
8. Aarons DE. The impact of advanced technology on critical care. Dilemmas in the making. *West Indian Med J* 1998;**47**:119–21.
9. Rose J, Hatcher S, Koelmeyer T. Suicide in Auckland 1989 to 1997. *N Z Med J* 1999;**112**(1094):324–6.
10. Beautrais AL. Suicide. *N Z Med J* 1999;**112**(1098):412–3.
11. McGovern C, Cusack DA. A study of suicides in Kildare, 1995–2002. *J Clin Forensic Med* 2004;**11**(6):289–98.